



Self-enforcing strategies to deter free-riding in the climate change mitigation game and other repeated public good games

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Abstract:

As the Copenhagen Accord indicates, most of the international community agrees that global mean temperature should not be allowed to rise more than two degrees Celsius above preindustrial levels to avoid unacceptable damages from climate change. The scientific evidence distilled in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change and recent reports by the US National Academies shows that this can only be achieved by vast reductions of greenhouse gas emissions. Still, international cooperation on greenhouse gas emissions reductions suffers from incentives to free-ride and to renegotiate agreements in case of noncompliance, and the same is true for other so-called "public good games." Using game theory, we show how one might overcome these problems with a simple dynamic strategy of linear compensation when the parameters of the problem fulfill some general conditions and players can be considered to be sufficiently rational. The proposed strategy redistributes liabilities according to past compliance levels in a proportionate and timely way. It can be used to implement any given allocation of target contributions, and we prove that it has several strong stability properties.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3179122>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Unspecified Exposure

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

Climate Change and Human Health Literature Portal

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Mitigation

Resource Type:

format or standard characteristic of resource

Policy/Opinion, Research Article

Timescale:

time period studied

Time Scale Unspecified